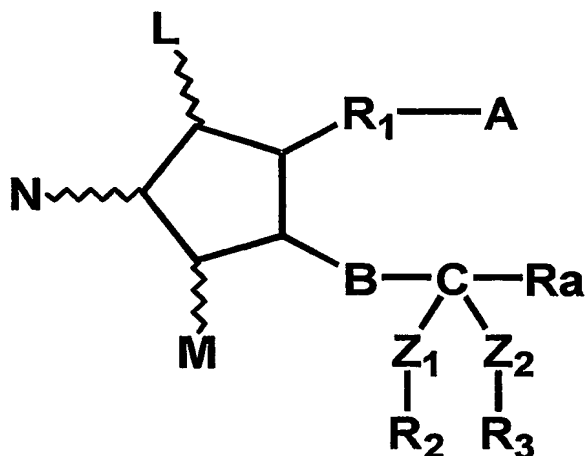


## CLAIMS

1. A composition for promoting hair growth in a mammalian subject, comprising a prostaglandin compound having two hetero atoms at the 15 position as an active ingredient thereof.

2. The composition as described in claim 1, wherein said prostaglandin compound is the compound as shown by the following formula (I):



wherein L, M and N are hydrogen, hydroxy, halogen, lower alkyl, hydroxy(lower)alkyl, lower alkanoyloxy or oxo, wherein at least one of L and M is a group other than hydrogen, and the five-membered ring may have at least one double bond;

A is -CH<sub>3</sub>, or -CH<sub>2</sub>OH, -COCH<sub>2</sub>OH, -COOH or a functional derivative thereof;

B is -CH<sub>2</sub>-CH<sub>2</sub>-, -CH=CH- or -C≡C-;

$Z_1$  and  $Z_2$  are oxygen, nitrogen or sulfur;

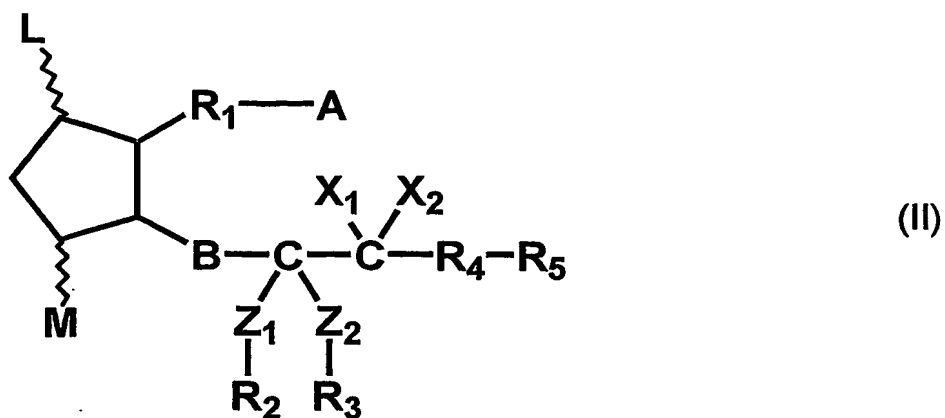
$R_2$  and  $R_3$  are optionally substituted lower alkyl, which is optionally linked together to form lower alkylene;

$R_1$  is a saturated or unsaturated bivalent lower or  
5 medium aliphatic hydrocarbon residue, which is unsubstituted or substituted with halogen, alkyl, hydroxy, oxo, aryl or heterocyclic group, and at least one of carbon atom in the aliphatic hydrocarbon is optionally substituted by oxygen, nitrogen or sulfur; and

10  $R_a$  is a saturated or unsaturated lower or medium aliphatic hydrocarbon residue, which is unsubstituted or substituted with halogen, oxo, hydroxy, lower alkoxy, lower alkanoyloxy, cyclo(lower)alkyl, cyclo(lower)alkyloxy, aryl, aryloxy, heterocyclic group or heterocyclic-oxy group; lower  
15 alkoxy; lower alkanoyloxy; cyclo(lower)alkyl; cyclo(lower)alkyloxy; aryl; aryloxy; heterocyclic group; heterocyclic-oxy group.

3. The composition as described in claim 2, wherein the prostaglandin compound is represented by the formula

20 (II):



wherein L, M, A, B, Z<sub>1</sub>, Z<sub>2</sub>, R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are the same as Claim 2,

X<sub>1</sub> and X<sub>2</sub> are hydrogen, lower alkyl, or halogen;

5 R<sub>4</sub> is a single bond or lower alkylene; and

R<sub>5</sub> is lower alkyl, lower alkoxy, lower alkanoyloxy, cyclo(lower)alkyl, cyclo(lower)alkyloxy, aryl, aryloxy, heterocyclic group or heterocyclic-oxy group.

4. The composition as described in claim 1, wherein  
10 said prostaglandin compound is 13,14-dihydro-15,15-ethylenedioxy-20-ethyl-PGF<sub>2α</sub> isopropyl ester.

5. The composition as described in claim 1, wherein  
said prostaglandin compound is 13,14-dihydro-15,15-ethylenedioxy-17-phenyl-18,19,20-trinor-PGF<sub>2α</sub> isopropyl  
15 ester.

6. The composition as described in claim 1, wherein  
said prostaglandin compound is 13,14-dihydro-15,15-trimethylenedioxy-20-ethyl-PGF<sub>2α</sub> isopropyl ester.

7. The composition as described in claim 1, wherein

said prostaglandin compound is 13,14-dihydro-15,15-dimethoxy-20-ethyl-PGF<sub>2α</sub> isopropyl ester.

8. The composition as described in claim 1, wherein

said prostaglandin compound is 13,14-dihydro-15,15-

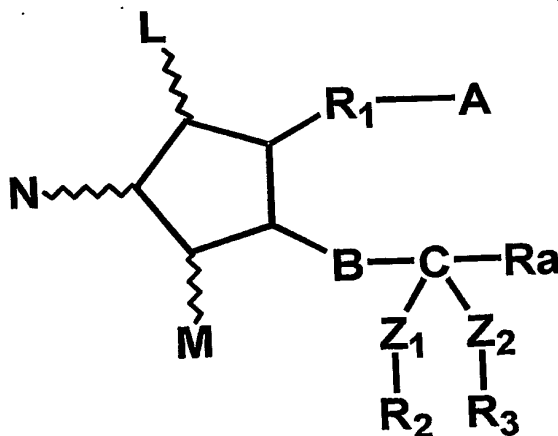
5 ethylenedioxy-20-ethyl-PGF<sub>2α</sub> ethyl ester.

9. A method for promoting hair growth in a mammalian subject, comprising administering an effective amount of a prostaglandin compound having two hetero atoms at the 15 position to the subject in need thereof.

10 10. Use of a prostaglandin compound having two hetero atoms at the 15 position for manufacturing a composition for promoting hair growth in a mammalian subject.

11. A compound represented by the following formula

(I):



15

wherein L, M and N are hydrogen, hydroxy, halogen, lower alkyl, hydroxy(lower)alkyl, lower alkanoyloxy or oxo, wherein at least one of L and M is a group other than

hydrogen, and the five-membered ring may have at least one double bond;

A is  $-\text{CH}_3$ , or  $-\text{CH}_2\text{OH}$ ,  $-\text{COCH}_2\text{OH}$ ,  $-\text{COOH}$  or a functional derivative thereof;

5 B is  $-\text{CH}_2-\text{CH}_2-$ ,  $-\text{CH}=\text{CH}-$  or  $-\text{C}\equiv\text{C}-$ ;

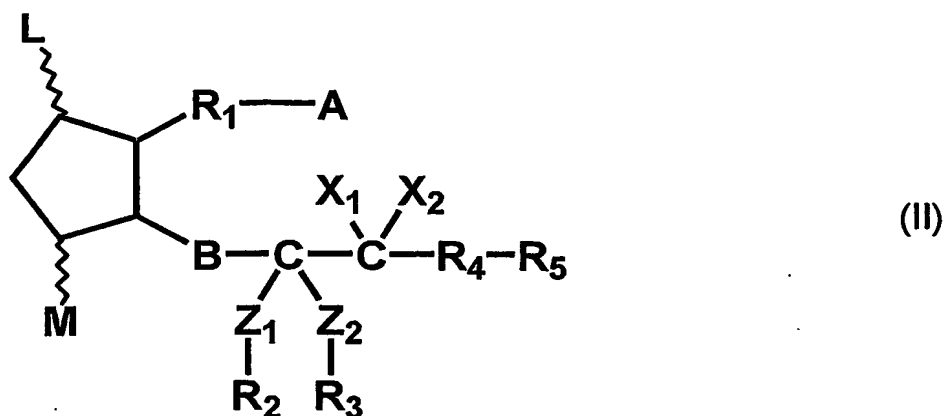
$\text{Z}_1$  and  $\text{Z}_2$  are oxygen, nitrogen or sulfur;

$\text{R}_2$  and  $\text{R}_3$  are optionally substituted lower alkyl, which is optionally linked together to form lower alkylene;

10  $\text{R}_1$  is a saturated or unsaturated bivalent lower or medium aliphatic hydrocarbon residue, which is unsubstituted or substituted with halogen, alkyl, hydroxy, oxo, aryl or heterocyclic group, and at least one of carbon atom in the aliphatic hydrocarbon is optionally substituted by oxygen, nitrogen or sulfur; and

15  $\text{R}_a$  is a saturated or unsaturated lower or medium aliphatic hydrocarbon residue, which is unsubstituted or substituted with halogen, oxo, hydroxy, lower alkoxy, lower alkanoyloxy, cyclo(lower)alkyl, cyclo(lower)alkyloxy, aryl, aryloxy, heterocyclic group or heterocyclic-oxy group; lower  
20 alkoxy; lower alkanoyloxy; cyclo(lower)alkyl; cyclo(lower)alkyloxy; aryl; aryloxy; heterocyclic group; heterocyclic-oxy group.

12. The compound as described in claim 11, wherein said compound is represented by the formula (II):



wherein L, M, A, B, Z<sub>1</sub>, Z<sub>2</sub>, R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are the same as Claim 11;

X<sub>1</sub> and X<sub>2</sub> are hydrogen, lower alkyl, or halogen;

5 R<sub>4</sub> is a single bond or lower alkylene; and

R<sub>5</sub> is lower alkyl, lower alkoxy, lower alkanoyloxy, cyclo(lower)alkyl, cyclo(lower)alkyloxy, aryl, aryloxy, heterocyclic group or heterocyclic-oxy group.

13. The compound as described in claim 12, wherein R<sub>2</sub>  
 10 and R<sub>3</sub> are linked together to form C3 alkylene.